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=> d his

     (FILE 'HOME' ENTERED AT 10:08:39 ON 26 NOV 2007)
     FILE 'CA' ENTERED AT 10:08:47 ON 26 NOV 2007
L1  1992 S (MULTIWELL OR MICROTIT? OR MICROPLATE OR MICROARRAY OR(WELL OR
         MICRO)(1W)(PLATE OR TRAY OR ARRAY))(5A)(READER OR IMAG? OR DETECTOR
         OR MONITOR OR ANALY!ER)
L2   626 S (MULTIWELL OR MICROTIT? OR MICROPLATE OR MICROARRAY OR(WELL OR
         MICRO)(1W)(PLATE OR TRAY OR ARRAY))(5A)(DETECT? OR MONITOR? OR
         ANALY? OR SCAN? OR FLUORESCEN? OR SENSING)(3A)(DEVICE OR
         INSTRUMENT? OR APPARATUS
L3   159 S L1-2(10A)(CALIBRAT? OR COMPENSAT? OR ESTIMAT? OR EVALUAT? OR
         REDUC? OR CORRECT?)
L4    13 S (SPECTRAL OR SPECTRUM OR INTENSITY OR FLUORESCEN?)(4A)(UNIFORMIT?
         OR NONUNIFORMIT? OR VARIABILIT? OR VARIATION OR DEVIAT? OR
         IRREGULAR? OR INCONSISTENT?) AND L1-2
L5   143 S L1-2 AND (ALGORITHM OR EQUATION OR NORMALIZ?)
L6   737 S L1-2 AND(CALIBRAT? OR COMPENSAT? OR ESTIMAT? OR EVALUAT? OR REDUC?
         OR CORRECT?)
L7     4 S L1-2 AND(CALIBRAT? OR COMPENSAT? OR ESTIMAT? OR EVALUAT? OR REDUC?
         OR CORRECT?)(7A)(SPECTRAL OR SPECTRUM OR INTENSITY OR FLUORESCEN?)
         (4A)(UNIFORMIT? OR NONUNIFORMIT? OR VARIABILIT? OR VARIATION OR
         DEVIAT? OR IRREGULAR? OR INCONSISTENT?)
L8   235 S L6 AND (AUTOMAT? OR PREPROCESS? OR PROCESSING OR CCD OR WIDE)
L9   380 S CALIBRAT?(3A)(PLATE OR TRAY)
L10    4 S L9 AND L1-2
L11   46 S 112 AND(SPECTRAL OR SPECTRUM OR INTENSITY OR FLUORESCEN?)(4A)
         (UNIFORMIT? OR NONUNIFORMIT? OR VARIABILIT? OR VARIATION OR DEVIAT?
         OR IRREGULAR? OR INCONSISTENT?)
L12  472 S L3-5,L7-8,L10-11
L13  287 S L12 AND PY<2004
L14  124 S L12 AND PATENT/DT
L15  279 S L13 NOT(ZEEMAN OR SINGLE CRYSTAL)
L16  272 S L15 NOT(ALLOY? OR NONINVASIVE OR TMOS OR CERRO OR XANES)
L17  262 S (L16 NOT (COSMIC OR THIN FOIL OR CALORIMETER OR CRYSTALLI? OR
         PINCH OR SOIL OR STERIC)) OR (L16 AND (MICROARRAY OR MULTIWELL))
L18  255 S L17 NOT (MASS SPECTRO? OR RADIOGRAPH? OR RADIOACT?)OR(L17 AND
         (MICROARRAY OR NON RADIOACT?))
     FILE 'BIOSIS' ENTERED AT 11:39:17 ON 26 NOV 2007
L19  147 S L13
L20  137 S L19 NOT(ZEEMAN OR SINGLE CRYSTAL OR ALLOY? OR NONINVASIVE OR TMOS
         OR CERRO OR XANES OR COSMIC OR THIN FOIL OR CALORIMETER OR
         CRYSTALLI? OR MASS SPECTRO? OR RADIOGRAPH? OR RADIOACT?)
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L21  162 S L13
L22  153 S L21 NOT(ZEEMAN OR SINGLE CRYSTAL OR ALLOY? OR NONINVASIVE OR TMOS
         OR CERRO OR XANES OR COSMIC OR THIN FOIL OR CALORIMETER OR
         CRYSTALLI? OR MASS SPECTRO? OR RADIOGRAPH? OR RADIOACT?)
     FILES 'CA', 'BIOSIS' AND 'MEDLINE' ENTERED AT 11:45:39 ON 26 NOV 2007
L23  381 DUP REM L18 L14 L20 L22 (288 DUPLICATES REMOVED)

=> d bib,ab,kwic l23 1-381

L23  ANSWER 60 OF 381  CA  COPYRIGHT 2007 ACS on STN
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AN 138:162722 CA
TI Solid state fluorescence and absorption spectroscopy
IN Palladino, Henry; Hood, Andrew
PA USA
SO U.S. Pat. Appl. Publ., 11 pp., Cont. of U. S. Ser. No. 404,698, abandoned.

PI	**US 2003030797**	**A1**	**20030213**	**US 2002-79264**	**20020219**
PRAI	US 1999-404698	B1	19990924		

AB Solid state devise for the **calibration** of **microplate** fluorescence and absorption **readers** and spectrometers is described. When present in a single moiety, the disclosed device can tell if the lamp photomultiplier tube and optical alignment of the microplate reader or spectrometer deviates from its true value. When present as graded calibration pieces, the disclosed device can be used to calibrate a fluorescence or absorption reader. Calibration pieces are shaped, polished and coated with color absorbing or fluorescent std. to fit in microplate holding trays or spectrometers which are com. available. Solid state devices are stable and durable and very inert to manipulations and thus are more reliable and unfaltering than solns. for absorption and fluorescence microplate readers or spectrometers.

L23 ANSWER 62 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 138:132128 CA
TI Method and **apparatus** for statistical **analysis** of data from DNA **microarrays**
IN Ghandour, Ghassan; Glynne, Richard
PA EOS Biotechnology, Inc., USA
SO U.S., 22 pp.

PI	**US 6516276**	**B1**	**20030204**	**US 1999-336506**	**19990618**
PRAI	US 1999-336506		19990618		

AB Computer programs and computer-implemented methods are disclosed for extg., analyzing and comparing data from biomol. binding expts. The invention receives a set of values corresponding to the interaction of one or more target samples with probes on one or more arrays of biomol. probes, and uses the values to generate one or more probability values indicating the probability that a mol. species complementary to the probe set is not present in the target samples, or is present at levels greater than or less than one or more ref. levels. The probability values are generated by comparing the values for individual probes in a probe set with values for a calibration set, which may include a null set, spiked probe sets, or housekeeping probe sets. **Normalized** exptl. values are generated for sets of probes on the arrays using statistical methods. Data is output in the form of data files including **normalized** exptl. values and probability values for probe sets in the arrays.

L23 ANSWER 117 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 139:390445 CA
TI The Synergy HT: a unique multi-detection **microplate reader** for HTS and drug discovery
AU Held, Paul; Buehrer, Lenore
CS Bio-Tek Instruments, USA
SO JALA (**2003**), 8(2), 44-49
AB A review. Pharmaceutical and biotechnol. research requires

instrumentation to be both functional and versatile. In the HTS and Drug Discovery environments, microplate-based assays are developed to make detns. on large nos. of samples. Regardless of the assay protocol, the end result is the measurement by some sort of detection device. Towards that end, Bio-Tek has developed the Synergy HT Multi-Detection **Microplate Reader.** Synergy HT utilizes two independent sets of optics to provide uncompromised performance. For absorbance measurements, there is a xenon-flash lamp with a monochromator for wavelength selection and photodiode detection. This allows the selection of any wavelength for endpoint or kinetic measures from 200 nm to 999 nm in 1 nm increments, as well as spectral scans. Traditional visible wavelength fluorescence measurements are made using a tungsten-halogen lamp with interference filters (excitation and emission) for wavelength selection and photomultiplier (PMT) detection. Glow luminescence measurements are also easily accomplished in Synergy HT. If time-resolved or UV excitation fluorescence measurements are required, Synergy HT **automatically** integrates the xenon-flash-monochromator excitation with the interference emission filter and PMT detection. Typical applications include antibody-antigen binding, receptor-liq. binding, ELISA, nucleic acid quantitation using fluorescent dyes or direct UV anal. Synergy HT is capable of reading any plate format up to 384-well plates and provides temp. control up to 50° C and shaking as std. features. It is compact (16" W × 15" D × 10" H) and robotics-compatible through the OLE functionality of the KC4 data **redn.** software that is bundled with the instrument. An upgrade to CFR 21 Part 11 compliant software is also available.

L23 ANSWER 135 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 137:227130 CA
TI Local mean **normalization** of **microarray** element signal intensities across an array surface: quality control and **correction** of spatially systematic artifacts
AU Colantuoni, Carlo; Henry, George; Zeger, Scott; Pevsner, Jonathan
CS Kennedy Krieger Institute, Johns Hopkins University School of Medicine, Baltimore, MD, USA
SO BioTechniques (**2002**), 32(6), 1316-1320
AB Here we present a methodol. for the **normalization** of element signal intensities to a mean intensity calcd. locally across the surface of a DNA **microarray.** These methods allow the detection and/or **correction** of spatially systematic artifacts in **microarray** data. These include artifacts that can be introduced during the robotic printing, hybridization, washing, or **imaging** of **microarrays.** Using array element signal intensities alone, this local mean **normalization** process can **correct** for such artifacts because they vary across the surface of the array. The local mean **normalization** can be used for quality control and data **correction** purposes in the anal. of **microarray** data. These **algorithms** assume that array elements are not spatially ordered with regard to sequence or biol. function and require that this spatial mapping is identical between the two sets of intensities to be compared. The tool described in this report was developed in the R statistical language and is freely available on the Internet as part of a larger gene expression anal. package. This Web implementation is interactive

and user-friendly and allows the easy use of the local mean **normalization** tool described here, without programming expertise or downloading of addnl. software.

L23 ANSWER 174 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 134:363631 CA
TI Apparatus and method for **calibration** of a **microarray** scanning system
IN Noblett, David
PA GSI Lumonics, Inc., USA
SO PCT Int. Appl., 21 pp.

PI	**WO 2001035074**	**A1**	**20010517**	**WO 2000-US41170**	**20001012**
	US 6471916	**B1**	**20021029**	**US 1999-437039**	**19991109**
PRAI	US 1999-437039	A	19991109		

AB A **microarray** scanning system for conducting **microarray** expts. on a planar substrate includes an excitation radiation source, a detection system, and a computational device, the planar substrate supporting a plurality of diln. marks contg. a fluorophore and located on the substrate surface at predetd. distances from a fiducial ref. mark and/or a **microarray**. **Automatic calibration** adjustment of either or both the detection system and the excitation radiation source is achieved via the computational device by irradiating the diln. spots, detecting emission radiation produced by the diln. spot fluorophore material, deriving a series of brightness readings from the levels of emission radiation detected at corresponding diln. spots; analyzing the brightness readings to obtain a fluorophore brightness characteristic as a function of concn.; and adjusting the sensitivity of the detection system and/or the intensity level of the source of excitation radiation in accordance with the fluorophore brightness characteristic.

L23 ANSWER 179 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 135:149576 CA
TI Automated optical reader for multiple samples, especially for nucleic acid assays
IN Andrews, Jeffrey P.; O'Keefe, Christian V.; Scrivens, Brian G.; Pope, Willard C.; Hansen, Timothy; Failing, Frank
PA Becton, Dickinson and Company, USA
SO Eur. Pat. Appl., 46 pp.

PI	**EP 1124128**	**A2**	**20010816**	**EP 2000-128062**	**20001221**
	US 6043880	**A**	**20000328**	**US 1997-929895**	**19970915**
PRAI	US 2000-483686	A	20000114		
	US 1997-929895	A	19970915		

AB An app. and method employ a plurality of light emitting devices which each can get light through a resp. optical fiber toward a resp. sample of a plurality of samples in a time-staggered manner. Light is generated in each of the samples at different times consistent with the times at which light is irradiated onto the sample. A single detector is used to detect the lights emitted from the plurality of samples at these different times. A plurality of bifurcated optical cable are coupled to the light emitting devices and single light detector, and the integrated end of each bifurcated cable acts as the light emitting port and light detecting port. Multiple targets can be detected from each of the plurality of samples in the same manner by providing an app. and method employing a different plurality of light emitting devices and

single detector for each target to be detected.

L23 ANSWER 207 OF 381 BIOSIS on STN
AN 2001:532334 BIOSIS
TI A comparison of fluorescamine and naphthalene-2,3-dicarboxaldehyde fluorogenic reagents for microplate-based detection of amino acids.
AU Bantan-Polak, Tjasa; Kassai, Miki; Grant, Kathryn B. [Reprint author]
CS Department of Chemistry, Center for Biotechnology and Drug Design, Georgia State University, University Plaza, Atlanta, GA, 30303-3083, USA kbgrant@gsu.edu
SO Analytical Biochemistry, (**October 15, 2001**) Vol. 297, No. 2, pp. 128-136.
AB The use of appropriate fluorometric derivatization procedures is of considerable importance for accurate determination of amino acids in biological samples and in metal-assisted peptide hydrolysis reactions. It is especially critical for the relative fluorescence intensities (RFI) of equal amounts of amino acids to be as similar as possible. While fluorescamine and naphthalene-2,3-dicarboxaldehyde (NDA) have proven to be excellent fluorogenic reagents for amino acid detection, the effects of various factors such as organic solvent, buffer, and pH have never been rigorously evaluated with respect to **normalizing** the relative fluorescence intensities of individual amino acids. To this end, here we describe optimized fluorescamine and NDA derivatization reactions that enhance the accuracy of microplate-based detection of amino acids. For both fluorescamine and NDA, we have shown that the RFI values of 16 of 19 amino acids are greater than 70%. Although determination of tryptophan is problematic, this difficulty is overcome by the addition of beta-cyclodextrin to the NDA reaction. In principle, the optimized fluorescamine and NDA microplate procedures reported here can be utilized as complementary techniques for the detection of 19 of 20 naturally occurring amino acids.

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L23 ANSWER 215 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 133:14292 CA
TI Fluorescence polarization assay system and method for reading many independent samples at the same time
IN Hoyt, Clifford C.
PA Cambridge Research & Instrumentation, Inc., USA
SO PCT Int. Appl., 69 pp.

PI	**WO 2000031518**	**A1**	**20000602**	**WO 1999-US25258**	**19991103**
	US 2002070349	**A1**	**20020613**	**US 1999-395661**	**19990914**
PRAI	US 1998-109618P	P	19981124		
	US 1999-395661	A	19990914		

AB An instrument is disclosed for fluorescence assays which is capable of reading many independent samples at the same time; with multiple-beam source, mirror, samples and detectors. This instrument provides enhanced throughput relative to single-sample instruments, time-resolved fluorescence, multi-band fluorescence, fluorescence resonance energy transfer (FRET), and fluorescence polarization. This invention is beneficial in applications such as high-throughput drug screening, and **automated** clin. testing. Also disclosed are means and methods for a fluorescence polarization measurement which is highly sensitive, inherently self-**calibrated**, and unaffected by lamp flicker or

photobleaching. This fluorescence polarization invention can be practiced on a variety of fluorescence instruments, including prior-art equipment such as microscopes and multi-**well plate readers**.

L23 ANSWER 242 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 130:308229 CA
TI Use of a Fluorescence Plate Reader for Measuring Kinetic Parameters with Inner Filter Effect Correction
AU Liu, Yaya; Kati, Warren; Chen, Chih-Ming; Tripathi, Rakesh; Molla, Akhter; Kohlbrenner, William
CS Antiviral Department, Infectious Disease Research, Pharmaceutical Discovery Division, Abbott Laboratories, Abbott Park, IL, 60064-3500, USA
SO Analytical Biochemistry (**1999**), 267(2), 331-335
AB A general method is presented here for the detn. of the Km, kcat, and kcat/Km of fluorescence resonance energy transfer (FRET) substrates using a fluorescence plate reader. A simple empirical method for correcting for the inner filter effect is shown to enable accurate and undistorted measurements of these very important kinetic parameters. Inner filter effect cor. rates of hydrolysis of a FRET peptide substrate by hepatitis C virus (HCV) NS3 protease at various substrate concns. enabled measurement of a Km value of 4.4 ± 0.3 μM and kcat/Km value of 96,500 ± 5800 M-1 s-1. These values are very close to the HPLC-detd. Km value of 4.6 ± 0.7 μM and kcat/Km value of 92,600 ± 14,000 M-1 s-1. We demonstrate that the inner filter effect **correction** of **microtiter** plate **reader** velocities enables rapid measurement of Ki and Ki' values and kinetic inhibition mechanisms for HCV NS3 protease inhibitors.

L23 ANSWER 243 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 130:278797 CA
TI Rapid measurements of intracellular calcium using a fluorescence plate reader
AU Lin, Kedan; Sadee, Wolfgang; Quillan, J. Mark
CS University of California, San Francisco, CA, USA
SO BioTechniques (**1999**), 26(2), 318-326
AB Intracellular calcium is a universal 2nd messenger that can serve as a broad based measure of receptor activity. Recent developments in multi-**well plate** fluorescence **readers** facilitate measurement of intracellular free-calcium levels and **reduce** reliance on slower, more cumbersome or expensive data collection methods. The authors describe a rapid and sensitive method to assay intracellular calcium ions in human embryonic kidney (HEK293) and Chinese hamster ovary (CHO) cells from multi-well plates using a fluorometer equipped with online injectors. The authors examine the compatibility of visible-light excitable dyes Calcium Green-1 and Oregon Green 488 BAPTA-1. Using this assay, the authors were able to detect and quantify activity from muscarinic and β-adrenergic receptors endogenous to HEK293 cells and detect calcium signals generated by activation of Gi-coupled recombinant μ-opioid and dopamine D2L receptors, and the Gs-coupled melanocortin subtype 4 (MC4) receptor. Fluorescence signals, stable in HEK293 cells, required the use of Oregon

Green 488 BAPTA-1 and an inhibitor of org. anion transport in CHO cells. Under appropriate conditions, both cell types can be used to collect complete concn.-response data for a variety of receptors (including a recombinant muscarinic M1 receptor expressed in CHO cells) from a single plate of dye-loaded cells.

L23 ANSWER 247 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 131:269078 CA
TI Digital imaging as a detection method for a fluorescent protease assay in 96-well and miniaturized assay plate formats
AU Abriola, Laura; Chin, Michael; Fuerst, Peter; Schweitzer, Robert; Sills, Matthew A.
CS Novartis Institute of Biomedical Research, Summit, NJ, USA
SO Journal of Biomolecular Screening (**1999**), 4(3), 121-127
AB The demand to increase throughput in HTS programs, without a concomitant addn. to costs, has grown significantly during the past few years. One approach to handle this demand is assay miniaturization, which can provide greater throughput, as well as significant cost savings through reduced reagent costs. Currently, one of the major challenges facing assay miniaturization is the ability to detect the assay signal accurately and rapidly in miniaturized formats. Digital imaging is a detection method that can measure fluorescent or luminescent signals in these miniaturized formats. In this study, an imaging system capable of detecting the signal from a fluorescent protease assay in multiple plate formats was used to evaluate this detection method in an HTS environment. A direct comparison was made between the results obtained from the imaging system and a fluorescent plate reader by screening 8,800 compds. in a 96-well plate format. The imaging system generated similar changes in relative signal for each well in the screen, identified the same active compds., and yielded similar IC50 values as compared to the plate reader. When a std. protease inhibitor was **evaluated** in 96-, 384-, 864-, and 1536-**well plates** using **imaging** detection, similar IC50 values were obtained. Furthermore, similar dose-response curves were generated for the compd. in 96- and 384-well assay plates read in a plate reader. These results provide support for digital imaging as an accurate and rapid detection method for high-d. microtiter plates.

L23 ANSWER 277 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 125:296567 CA
TI Multianalytical system (MAS): software for enzyme-linked immunosorbent assay (ELISA) data **processing** with applications to screening and diagnostic tests
AU Escobar, N. Iznaga; Armstrong, J. Solozabal; Gandolff, G. Nunez; Morales, A. Morales; Valdes, Y. Perdomo; Almeida, A. Perdomo; Trapaga, C. Garcia; Hernandez, E. Artaza
CS Center of Molecular Immunology, P.O. Box 16040, Havana, 11600, Cuba
SO Journal of Immunological Methods (**1996**), 196(1), 97-99
AB A microcomputer software package for detg. the concn. of either the antibody or antigen from ELISA data for IBM PC compatible is presented. In the program optical densities (OD) and fluorescence obtained from 96-well ELISA plate can be input either directly, by interfacing with different brands of **microplate reader** such as Multiskan II Plus and Organon Teknika to the computer or manually. This software utilizes

some math. and statistical models to fit the std. curve of each assay and interpolate analyte concn. using data from OD or fluorescence measurements. Cubic spline (Guardabasso et al., 1988), bezier and polynomial (Rodbard, 1979; Baud et al., 1991) interpolation formulas can be used to fit the data over the entire range for **estg**. the antibody or antigen concn. of the unknown samples whose OD or fluorescence is beyond the entire range. This software package, based on the concn. values of the analyte detd. in different fluids, and with some rules and **algorithms**, is used to calc. the parameters of screening and diagnostic tests such as sensitivity, specificity and predictive values (Coughlin et al., 1992). With the construction of the Receiver Operating Characteristic (ROC) curve it is possible to analyze different values of the sensitivity and specificity of the screening and diagnostic tests. A comparative statistical test for two populations that are non-normally distributed using a non-parametric Mann-Whitney test is provided. This software is an expandable tool designed for general use in clin. and exptl. applications, including diagnostic and screening tests.

L23 ANSWER 279 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 125:106044 CA
TI Detection of herpes simplex virus DNA in cerebrospinal fluid samples using the polymerase chain reaction and microplate hybridization
AU Vesanen, Mika; Piiparinen, Heli; Kallio, Arja; Vaheri, Antti
CS Haartman Institute, Department of Virology, P.O. Box 21, FIN-00014 University of Helsinki, Helsinki, Finland
SO Journal of Virological Methods (**1996**), 59(1,2), 1-11
AB As conventional polymerase chain reaction (PCR) procedures are time-consuming and laborious, we developed and **evaluated** a rapid semi-**automatic** microplate method to detect the amplified PCR products. The use of PCR, with subsequent hybridization in microplates, is described for the detection of herpes simplex virus (HSV) DNA in cerebrospinal fluid samples. The principle of the method is based on two phases. Firstly, the amplification of the viral DNA in the sample is undertaken using a pair of primers of which one is biotinylated. Secondly, the amplified viral genomic sequences are bound to the wells of streptavidin-coated microplates and hybridized with digoxigenin-labeled oligonucleotide probes which are then detected using anti-digoxigenin antibody enzyme conjugates and either a photometric, fluorometric or luminometric substrate and **microplate reader**. The method is highly sensitive allowing the detection of as few as five purified DNA mols. Compared to conventional gel electrophoresis followed by Southern blotting the established microplate hybridization is also much less time-consuming and involves less manual work. The applicability of the method is described for use as a routine diagnostic procedure for detection of early central nervous system infections caused by HSV-1 and HSV-2.

L23 ANSWER 301 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 119:66189 CA
TI A continuous fluorescence assay of renin activity
AU Wang, Gary T.; Chung, Christine C.; Holzman, Thomas F.; Krafft, Grant A.
CS Pharm. Prod. Div., Abbott Lab., Abott Park, IL, 60064, USA
SO Analytical Biochemistry (**1993**), 210(2), 351-9

AB A sensitive fluorescence assay that employs a new fluorogenic peptide substrate has been developed to continuously measure the proteolytic activity of human renin. The substrate, DABCYL-gaba-Ile-His-Pro-Phe-His-Leu-Val-Ile-His-Thr-EDANS [where DABCYL=4-(4-dimethylaminophenylazo) benzoic acid and EDANS=5-[(2-aminoethyl)amino]-naphthalene-1-sulfonic acid], has been designed to incorporate the renin cleavage site that occurs in the N-terminal peptide of human angiotensinogen. The assay relies upon resonance energy transfer-mediated, intramol. fluorescence quenching that occurs in the intact peptide substrate. Efficient fluorescence quenching occurs as a result of favorable energetic overlap of the EDANS excited state and the DABCYL absorption, and the relatively long excited state lifetime of the EDANS fluorophore. Cleavage of the substrate by renin liberates the peptidyl-EDANS fragment from proximity with the DABCYL acceptor, restoring the higher, unattenuated fluorescence of the EDANS moiety. This leads to a time-dependent increase in fluorescence intensity, directly related to the extent of substrate consumed by renin cleavage. The kinetics of renin-catalyzed hydrolysis of this substrate have been shown to be consistent with a simple substrate inhibition model with a substrate Km .simeq. 1.5 μM at physiol. pH; cleavage of the substrate occurs specifically at the Leu-Val bond and corresponds to the renin cleavage site of angiotensinogen, as reported earlier. This report describes in detail the synthesis of the fluorogenic renin substrate and its application in assays of renin activity. Assay sensitivity has been **evaluated** by a series of enzyme diln. expts. using the continuous assay format, showing that the assay can detect renin as low as 30 ng/mL after an incubation of only 3-5 min. It was **estd.** that with extended incubation time (2-3 h) the assay can detect renin at 0.5 ng/mL concn. level. An **automated**, high throughput fluorometric renin assay has been developed for a 96-**well microtiter-plate** fluorescence **reader**, which is useful for studies of enzyme inhibitors and enzyme stability.

L23 ANSWER 317 OF 381 BIOSIS on STN
AN 1992:326727 BIOSIS
TI A MICROELISA ASSAY FOR DETECTION OF ANTI-HLA ACTIVITY OF MOUSE MONOCLONAL ANTIBODIES USING AN ASTROSCAN 2100 **AUTOMATED** PLATE READER.
AU SADLER A M [Reprint author]; KRAUSA P; MARSH S G E; HEYES J M; BODMER J G
CS TISSUE ANTIGEN LAB, IMPERIAL CANCER RES FUND, PO BOX 123, LINCOLN'S INN FIELDS, LONDON WC2A 3PX, UK
SO Journal of Immunological Methods, (**1992**) Vol. 149, No. 1, pp. 11-19.
AB A microenzyme-linked immunosorbent assay (microELISA) method has been developed using an Astroscan 2100 system **automated** plate reader which was initially designed for tissue typing by a two colour fluorescent microcytotoxicity assay. A 96-well plate ELISA used for screening mouse monoclonal antibodies raised against surface HLA antigens has been modified for use with the Astroscan plate **reader** and 72-**well** typing **trays**. The existing substrate 4-methylumbelliferyl-β-D-galactoside (4MUG) had been replaced with fluorescein-di-β-D-galactopyranoside (FDG), to provide a wavelength (530 nm) detectable by the Astroscan or other **automated** plate readers designed for reading microcytotoxicity

assay plates. The assay volumes have also have been **reduced** tenfold for use with Terasaki microtest plates. The assay now has the major advantage of requiring only 5 µl of test supernatant allowing hybridomas to be screened earlier during a fusion and on a wider cell panel. The use of the large panel which includes B lymphoblastoid cell lines (B-LCL) and mouse L cell transfectants expressing HLA genes, **reduces** the length of time the hybridomas need to be kept in tissue culture before selection. Other advantages include the **reduction** in the number of target cells required, smaller volumes of reagents throughout the assay and the ability to screen cytotoxic as well as non-cytotoxic monoclonal antibodies. The sensitivity of this microELISA proved to be comparable with the original assay and so provides and efficient screening method for monoclonal antibodies.

L23 ANSWER 345 OF 381 BIOSIS on STN
AN 1988:478693 BIOSIS
TI LOCATION DEPENDENT BIASES IN **AUTOMATIC** 96-WELL **MICROPLATE READERS**.
AU HARRISON R O [Reprint author]; HAMMOCK B D
CS UNIV CALIF, DEP ENTOMOL, DAVIS, CA 95616, USA
SO Journal of the Association of Official Analytical Chemists, (**1988**) Vol. 71, No. 5, pp. 981-987.
AB Procedures performed in 96-well **microplates** and quantitated by **automatic readers** assume instruments to be precise, accurate, and free of well location dependent bias. Instrument specifications generally focus on precision and accuracy without specifically addressing biases which are dependent on well location. These biases appear to be meniscus dependent and can be demonstrated in varying degrees in **automatic** readers of many designs by using a reverse plate wet test, which compares repeated readings of a dye loaded plate in normal and reversed positions. This test analyzes differences between readings and is, therefore, independent of pipetting error or other experimental variables such as protein binding or immunoassay variability. Different plates increased or decreased the magnitude of observed errors but did not themselves cause the errors measured by the reverse plate wet test. Error patterns were consistent for each reader and varied widely among the 16 instruments tested. Only 4 of 16 instruments passed an existing manufacturer's specification for precision, and only one of the 16 readers tested passed a similar specification for accuracy. The severest location dependent bias was found in an instrument which exhibited excellent repeatability and consistently passed its built-in diagnosis tests. One reader with significant bias was returned to the manufacturer for routine service and **calibration**, but it was not demonstrably improved. The reverse plate wet test is an extremely useful diagnostic tool for quality control at all stages of instrument manufacture and use.

L23 ANSWER 351 OF 381 BIOSIS on STN
AN 1987:400949 BIOSIS
TI RAPID DATA ACQUISITION FROM A **MICROTITER** PLATE FLUORESCENCE **READER** AND APPLICATIONS IN KINETIC MEASUREMENTS.
AU HESFORD F [Reprint author]; SCHMITT M; LAZARY S
CS DIV IMMUNOGENET, INST ANIM HUSBANDRY, UNIV BERNE, BREMGARTENSTRASSE 109P, 3012 BERNE, SWITZERLAND

SO Journal of Immunological Methods, (**1987**) Vol. 100, No. 1-2, pp. 269-280.
AB Programs written in Applesoft BASIC for the rapid acquisition and **evaluation** of data from a commercially available **microtiter** plate fluorescence **reader** are presented. Using the data acquisition program, the relative fluorescence readings from all 96 wells of the microtiter plate (one read cycle of the fluorescence reader) can be stored in each of up to 90 consecutively numbered files on a single-sided diskette. A simple timer circuit is described which, when used in conjunction with the above program, initiates the fluorescence reading process at preset time intervals, thus making **automatic** acquisition of data possible. A further program plots the data from consecutive files on the computer monitor and prints a hard copy if required. The feasibility of applying the above system and software to kinetic measurements in enzyme systems is demonstrated using methylumbelliferyl phosphate and an alkaline phosphatase/immunoglobulin conjugate. In addition, its use in following the formation of extracellular hydrogen peroxide by stimulated polymorphonuclear leukocytes using horseradish peroxidase-coupled oxidation of the fluorescent compound 7-hydroxy-6-methoxy-coumarin (scopoletin) is described.

L23 ANSWER 357 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 105:111335 CA
TI A rapid, flexible method for biochemical assays using a **microtiter** plate **reader** and a microcomputer. Application for assays of protein, sodium-potassium-adenosine triphosphatase and potassium-p-nitrophenylphosphatase
AU Loomis, Thomas C.; Stahl, William L.
CS Sch. Med., Univ. Washington, Seattle, WA, 98108, USA
SO International Journal of Bio-Medical Computing (**1986**), 18(3-4), 183-92
AB A computerized system which greatly accelerates and eases the collection, storage, and anal. of data has been applied to several std. biochem. assays. The system uses a com. available **microtiter** plate **reader** connected to an Apple IIe microcomputer via a std. serial port. Data are transmitted **automatically** from the reader to the microcomputer, where they can be viewed, printed, further analyzed immediately, or stored on a diskette for later retrieval and **processing**. Some or all of the data may be entered manually. The program calcs. a linear least-squares best fit to a std. curve after **correcting** all data for blanks, then dets. the quantities of substrate or product contained in each well of a microtiter plate. Data from 2 plates may be combined, enabling calcn. of enzyme specific activities. This system can be adapted to any assay whose final step can be performed by a **microtiter** plate **reader**. Its use is described for detn. of protein concn., (Na+,K+)-ATPase activity, and K+-stimulated p-nitrophenylphosphatase activity.

L23 ANSWER 360 OF 381 CA COPYRIGHT 2007 ACS on STN
AN 103:35736 CA
TI A semi-**automated** micro-assay for hydrogen peroxide release by human blood monocytes and mouse peritoneal macrophages
AU De la Harpe, Jon; Nathan, Carl F.
CS Lab. Cell. Physiol. Immunol., Rockefeller Univ., New York, NY, 10021, USA
SO Journal of Immunological Methods (**1985**), 78(2), 323-36

AB H2O2 secreted by mononuclear phagocytes can be detected by monitoring the horseradish peroxidase-catalyzed oxidn. of fluorescent scopoletin. This technique has been adapted to a semi-**automated** micro-scale with the aid of **automatic** fluorescence and absorbance **micro**-culture **plate readers** to measure H2O2 and protein, resp., in the same culture wells. The assay can accurately and precisely detect as little as 0.1 nmol H2O2 or 1 μg cell protein, permitting the calcn. of specific secretion (nmol H2O2/mg cell protein) from as few as 2 × 104 human blood monocytes or mouse peritoneal macrophages. Cumulative H2O2 secretion in individual wells may be recorded non-destructively at frequent intervals for time course measurements. Less than 1 min is required to record the fluorescence in all 96 wells of a micro-culture plate. The assay is highly reproducible, with std. deviations for triplicates typically less than 5-10% of the mean, and gives values in close agreement with those obtained in 10-fold larger samples by previous methods. It is feasible to process 1000 samples per day, with order of magnitude savings in labor, cells, sera, media, cytokines, and reagents compared to earlier forms of the assay. The assay is useful in **evaluating** the cellular effects of cytokines and for assaying their activity in chromatog. fractions and hybridoma cultures.

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